



FIG. 2

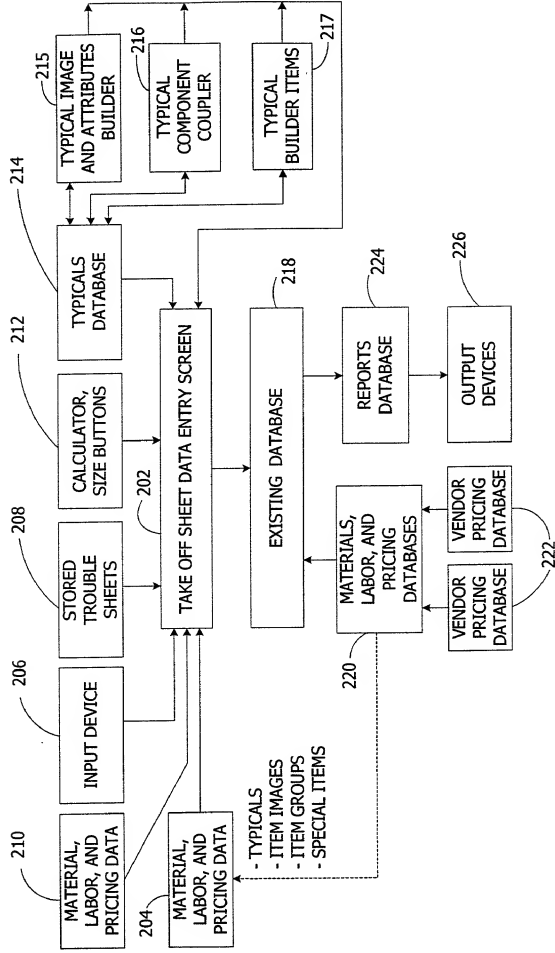


FIG. 3A

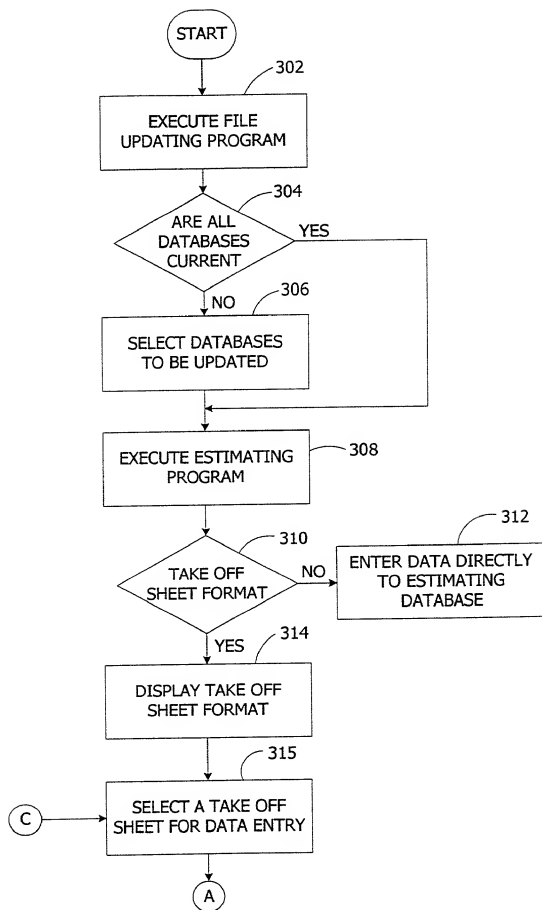


FIG. 3B

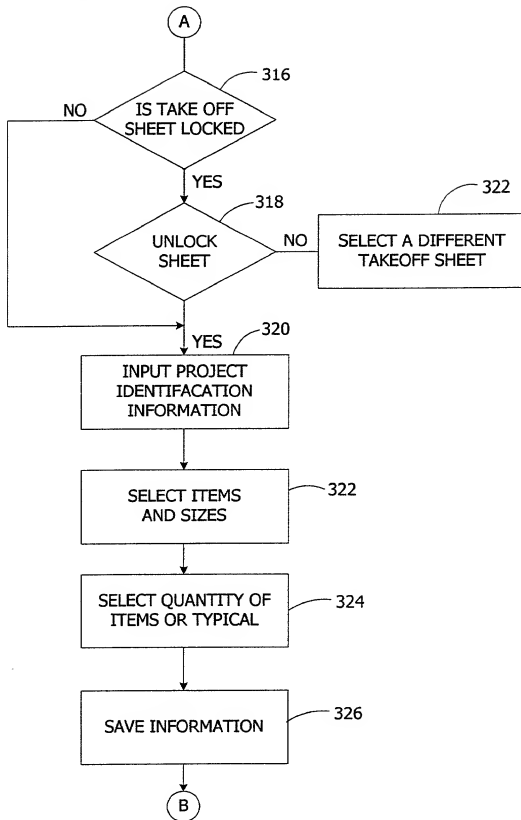


FIG. 3C

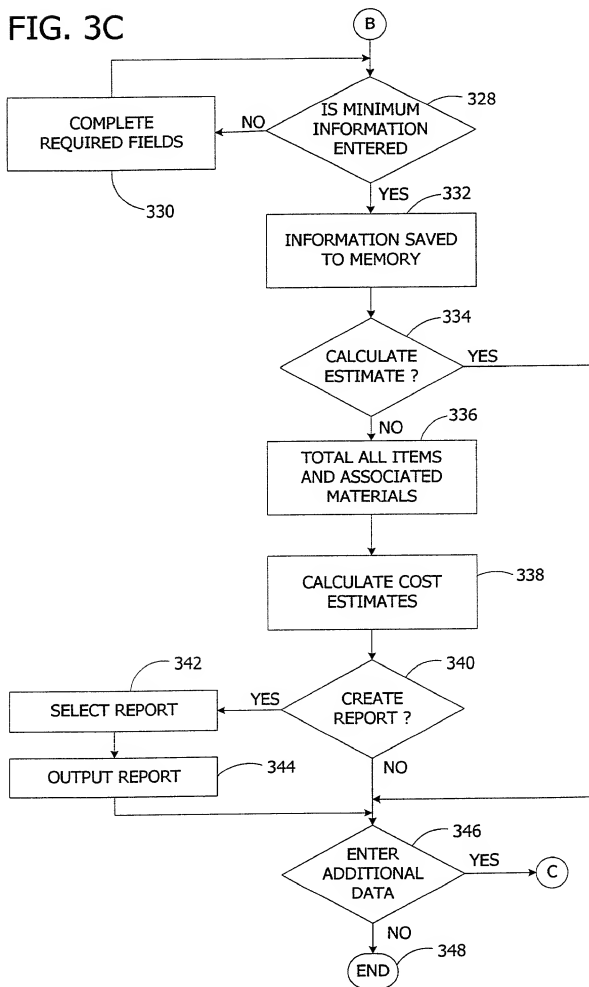
0925399-080901  
106080-6652660

FIG. 4

File Copy Down Utility for PD Estimating Program

This program will copy down the latest programs, databases, reports, icons etc. for the PD Estimating Program.

Current Files on Your Computer		Current Files on Server		Copy Down Now?	
Program File Name	Program File Level	Program File Name	Program File Level	Yes	Yes
Material Type Database (Original)	2/15/01 10:46:02 AM	Material Type Database (Original)	8/9/99 1:35:50 AM	<input type="checkbox"/>	<input type="checkbox"/>
Architect-Bunch Database (Original)	2/15/01 10:46:02 AM	Architect-Bunch Database (Original)	4/7/99 9:47:32 AM	<input type="checkbox"/>	<input type="checkbox"/>
Heavy Industrial Database (Original)	2/15/01 10:46:02 AM	Heavy Industrial Database (Original)	4/7/99 9:47:32 AM	<input type="checkbox"/>	<input type="checkbox"/>
Takeoff Database (Blank)	4/22/01 6:52:16 AM	Takeoff Database (Blank)	8/2/99 11:29:46 AM	<input type="checkbox"/>	<input type="checkbox"/>
Reports	Files are current	Reports	Files are current	<input type="checkbox"/>	<input type="checkbox"/>
Other Files	Files are current	Other Files	Files are current	<input type="checkbox"/>	<input type="checkbox"/>

Exit and go to PD Estimating

Type - (TAKEOFF - Take Off Sheet Format)

Project Name Pkg No		FORMAL BUILDING 2		T.O. SH#		Find		Delete Refresh	
Pkg No		FORMAL BUILDING 2		Rev No		14 4 1		Show Tool Tip	
System		HEATING HOT WATER		Material		Black-Stud Wgt PE A53 ERW pipe with standard weight		Show Material Messages	
Material		Black-Stud Wgt PE A53 ERW pipe with standard weight		Backward Intervals		1/2 2 1		Show all variables	
Unit		Calculator		Size		1/2 1 1 1/4 1 1/2 2 2 1/2 3 4 6		Pick a Typical	
Item		Calculator		Size		1/2 1 1 1/4 1 1/2 2 2 1/2 3 4 6		Pick a Typical	
PIPE		14		1		1		Save this sheet	
PIPE		14		1		1		Use from previous sheet	
PIPE		14		1		1		Copy info to next sheet	
PIPE		14		1		1		Calculate Time Progress	
PIPE		14		1		1		Undo	
PIPE		14		1		1		Labor Factor	
PIPE		14		1		1		Material Factor	
PIPE		14		1		1		Neg. Take-Off sheet	
PIPE		14		1		1		Multiply Data by	
PIPE		14		1		1		Save Submittal Unlinked	
PIPE		14		1		1		Save Unlinked	
PIPE		14		1		1		Enter Pipe Manually	
PIPE		14		1		1		Item List Unlinked	
PIPE		14		1		1		Show next step messages	
PIPE		14		1		1		Count joints	
PIPE		14		1		1		Count hangers	
PIPE		14		1		1		Pipe Calculator Mode Off	
PIPE		14		1		1		Show Pipe Calculator	
PIPE		14		1		1		Pipe Tagging Mode	
PIPE		14		1		1		Total Records =	
PIPE		14		1		1		Cost Item Off?	

FIG. 6

☐ POE - TAKEOFF - Take Off Sheet Format) - [E] X  
☐ File ☐ View ☐ Tools ☐ Window ☐ Help

---

Project Name: Blank Table, Oil Sheet  
 Part No: 111  
 Drawing No: 111  
 System: CHILLED WATER  
 Material: Copper Type L pipe and wrought copper fittings using 55/5  
 Part 84 P

T.O. Sheet Rev: 0  
 Format: AAA-0001  
 Find ☐ Delete ☐ Refresh ☐

Input Sheet Code ☒ Show Tool Tip  
 Show Material Message ☐  
 Show UNLOADED ☐  
 Clear all quantities

Bidding Size: 1 2 3 4  
 Insert ☐ Item ☐ Calculator ☐ Size ☐

☒ Pick Items - [E] X

Group Description: Group Sort by Click twice to view items below.

Group Description:	Item Description:	Refresh List Above	The Current Material Is	Click to view items Available
FIXTURES AND EQUIPMENT FLOOR AND WALL SLEEVES FLOOR AND WALL SLEEVES MISCELLANEOUS PIPE AND FITTINGS PIPE AND FITTINGS SPECIALTIES PIPE TUBING	SUPPORTS AND SUPPORT ITEMS SWAGelok VCR FITTINGS SWAGelok VCR FITTINGS SWAGelok VCR FITTINGS ANTI TWIST SWAGelok VCR FITTINGS H-TYPE SWAGelok COMPRESSION FITTINGS BRAC SWAGelok COMPRESSION FITTINGS SS 3			AIR VENTS PETERS PUG THERMOMETER
1	MANUAL AIR VENT PETERS TIGHT TROUSE THERMOMETER STRAIGHT THERMOMETER STRAIGHT			
1	PETERS PLUG WITH PROBE PETERS PLUG WITH PROBE FLANGE #1 B & O SET SHUT-OFF VALVE CHECK VALVE RAINY VALVE WALL SLEEVE HOUSER			Available Sizes: <input type="checkbox"/> Show Available Sizes

Last picked:  
 PETERS PLUG WITH PROBE

Add An Item | Close | Clear List Above

1/15/01 14:08 PM



PDF - [TAKEOFF - Take Off Sheet Format] File View Tools Window Help

[illegible]

FIG. 8

PIPE TAKEOFF - Take Off Sheet (Form)

File View Tools Window Help

Project Name: Blank Take Off Sheet Drawing No: T O SH-18 Rev No: 16

Format: (AA-0001) Find Delete Refresh

System: Show Tool Tips Show Material Messages

Material: Sheet UNLOCKED

Sheet UNLOCKED

Check all quantities

Pick a Typical

Reduction Size: 2 3 4

Save this sheet

Copy info for next sheet

Calculate This Project

Undo

Labor Factor: 1

Material Factor: 1

Next Take Off sheet

Multiplying Div By

Size Buttons: Unlocked

Calculator: Unlocked

Enter Qty Manually

Item List: Unlocked

Show next step messages

Count joints

Count hangers

Pipe Calculator Mode Off

Sheet Pipe Calculator

Sheet Takeoff Fields

Total Records =

Cross Hairs On?

Item Calculator Size

Item Pick a setting size

1/8	1/4	3/8	1/2
3/4	1	1-1/4	1-1/2
2	2-1/2	3	4
6	8	10	12
14	15	16	18
20	24	30	36
42	48	Chase	

Pressure DWV

ITEM

PIPE

45 DEG BLOW

TEE

REDUCING TEE

CONIC REDUCER

COUPLING

MALE ADAPTER

FEMALE ADAPTER

FLAP

UNION

ELECTRIC UNION

FLANGE #1

90 SET

SHUT-OFF VALVE

CHECK VALVE

SWAY VALVE

WALL SLERVE

FLANGER

Aluminum Data Sheet

14 14 4

7/7/01 4:07 AM

PDE - [TAKEOFF - Take Off Sheet Format]

Project Name		Formal (AA-0001)		End		Update Refresh	
Proj No		T.O. SH #		Rev No			
System		Drawing No		Input Start Date			
Material		CHILLED WATER		Show Tool Tip			
Item		Black Std Wgt PE A53 ERW pipe with standard weight		Show Material Names			
Calculator		Forwarding 1/2-24 Hr		Steel UNLOCKED			
Size		1/2 3/4 1 1-1/4 1-1/2 2 2-1/2 3 4		Clear all numbers			
Item		Calculator		Pick & Ignore			
PE		SIZE BUTT		Save the sheet			
PE		1/8 3 16		Info from previous sheet			
PE		1/4 3 12 18		Copy info to next sheet			
PE		3/8 4 20		Calculate this Page			
PE		1/2 5 24		Material Factor			
PE		3/4 5 36		Labor Factor			
PE		1 8 36		Material Factor			
PE		1-1/4 10 42		New Task Off sheet			
PE		1-1/2 12 48		Multiple Off by			
PE		2 14		Size Butters-Unlocked			
PE		2 14		Calculator-Unlocked			
PE		2 14		Enter Sign Manually			
PE		2 14		Item Unlocked			
PE		2 14		Show next step messages			
PE		2 14		Count points			
PE		2 14		Count changes			
PE		2 14		Pipe Calculation Mode Off			
PE		2 14		Show Pipe Calculator			
PE		2 14		Hide Tasting Fields			
PE		2 14		Total Recounts =			
PE		2 14		Count Hide Off			
PE		2 14		Alternate Data Sool			

Figure 1. The effect of the concentration of the inhibitor on the rate of polymerization of  $\alpha$ -methylstyrene in the presence of  $\text{SnCl}_4$  at  $25^\circ\text{C}$ .

PDF - TAKEOFF - Take Off Sheet Format!

1

FIG. 11

PDF

File View Layout Window Help

**TAKEDIFF - Take Off Sheet Format**

Project Name		10 Sh #	
Proj No	500701	Down to	10-1
System	FILLED WATER	Rev No	2
Material	Black Std Wst PE A53 ERW pipe with standard weight		
Unit	100'weld fittings 1/2-24 FIP		

Item	Calculator	Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24	30	36	42	48	60	72	90	108	120	144	168	180	210	240	300	360	420	480	600	720	900	1080	1200	1440	1680	1800	2100	2400	3000	3600	4200	4800	6000	7200	9000	10800	12000	14400	16800	18000	21000	24000	30000	36000	42000	48000	60000	72000	90000	108000	120000	144000	168000	180000	210000	240000	300000	360000	420000	480000	600000	720000	900000	1080000	1200000	1440000	1680000	1800000	2100000	2400000	3000000	3600000	4200000	4800000	6000000	7200000	9000000	10800000	12000000	14400000	16800000	18000000	21000000	24000000	30000000	36000000	42000000	48000000	60000000	72000000	90000000	108000000	120000000	144000000	168000000	180000000	210000000	240000000	300000000	360000000	420000000	480000000	600000000	720000000	900000000	1080000000	1200000000	1440000000	1680000000	1800000000	2100000000	2400000000	3000000000	3600000000	4200000000	4800000000	6000000000	7200000000	9000000000	10800000000	12000000000	14400000000	16800000000	18000000000	21000000000	24000000000	30000000000	36000000000	42000000000	48000000000	60000000000	72000000000	90000000000	108000000000	120000000000	144000000000	168000000000	180000000000	210000000000	240000000000	300000000000	360000000000	420000000000	480000000000	600000000000	720000000000	900000000000	1080000000000	1200000000000	1440000000000	1680000000000	1800000000000	2100000000000	2400000000000	3000000000000	3600000000000	4200000000000	4800000000000	6000000000000	7200000000000	9000000000000	10800000000000	12000000000000	14400000000000	16800000000000	18000000000000	21000000000000	24000000000000	30000000000000	36000000000000	42000000000000	48000000000000	60000000000000	72000000000000	90000000000000	108000000000000	120000000000000	144000000000000	168000000000000	180000000000000	210000000000000	240000000000000	300000000000000	360000000000000	420000000000000	480000000000000	600000000000000	720000000000000	900000000000000	1080000000000000	1200000000000000	1440000000000000	1680000000000000	1800000000000000	2100000000000000	2400000000000000	3000000000000000	3600000000000000	4200000000000000	4800000000000000	6000000000000000	7200000000000000	9000000000000000	10800000000000000	12000000000000000	14400000000000000	16800000000000000	18000000000000000	21000000000000000	24000000000000000	30000000000000000	36000000000000000	42000000000000000	48000000000000000	60000000000000000	72000000000000000	90000000000000000	108000000000000000	120
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FIG. 12

[illegible]

Link images with text boxes inset values and link associated images for equipment book up:

[illegible]

FIG. 14

106080 66232660

File View

Create Plumbing Typicals

Show Options

Show All Fields

Clear Short Desc

Typical X Qty

Water Options

General Options

Drop/Riser Options

☐ No Riser  
☒ Top Left  
☐ Top Right  
☐ Bottom Left  
☐ Bottom Right

☐ Up Feed (Left)  
☐ Up Feed (Right)  
☐ Riser (Left)  
☐ Riser (Right)

☐ With Air Chambers  
☐ W/No Air Chambers

☐ Reducing Tees  
☐ Fluted Tees

☐ Public  
☐ Private

☐ W/No Valves  
☐ With Valves

☐ NSPC  
☐ UPC  
☐ IPCA  
☐ BSCA  
☐ Illinois

☒ w/ Riser AG - Left  
☐ w/ Riser AG - Right  
☐ w/ Riser UG - Left  
☐ w/ Riser UG - Right  
☐ w/o Riser AG - Left  
☐ w/o Riser AG - Right  
☐ w/o Riser UG - Left  
☐ w/o Riser UG - Right

Apply Changes Made Above

Done

Riser No.   
 Description Water:   
 System:   
 Mat Type:

Hot Water Sanitary Cold DW

Cold  
 Hot  
 No

The following items are for the current view of



FIG. 15

Link images with text boxes, inset values and link-associated images for equipment book users.

Pick a size and then select the corresponding number(s) to the right.

Choose a Group 2 Description.

Cold Water for WC-PV w/ AC and T (NSPC)

Pick a size and then select the corresponding number(s) to the right.

1/2	3/4	1	1 1/4	1 1/2	2	3	4

Typical ID No.

Size Dim Boxes:

Smaller Typical ID:

Larger Typical ID:

Pick Feature/Equip/Item Below:

WC-Am. Std. 2557-103

WC-Am. Std. 2557-103

Cold Water for WC-PV w/ AC and T

WC-Am. Std. 2557-103

Drive Location Pipe:

File Name:

Long Description:

Filling Group:

COPPER LIST 1

GPM/FU [0]

Add to Typical Builder

Refresh

View

New

Save

Delete

Enter All

Filling Type Guide:

COPPER LIST 1

COPPER LIST 2

COPPER LIST 3

COPPER LIST 4

COPPER LIST 5

COPPER LIST 6

COPPER LIST 7

COPPER LIST 8

COPPER LIST 9

COPPER LIST 10

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COPPER LIST 184

COPPER LIST 185

COPPER LIST 186

COPPER LIST 187

COPPER LIST 188

COPPER LIST 189

COPPER LIST 190

COPPER LIST 191

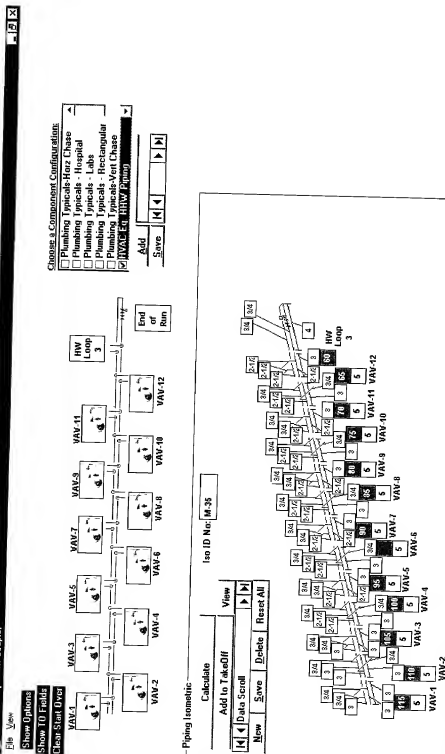
COPPER LIST 192

COPPER LIST 193

COPPER LIST 194

COPPER LIST 195

### Typical Component Coupler



The following items are for the current view of

FIG. 17

16
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Typical Builder



FIG. 19

**PUE - TAKEOFF - Take Off Sheet Format**

File View Tools Window Help

Blank Take Off Sheet

Project Name: \_\_\_\_\_ Proj. No: \_\_\_\_\_ Drawing No: 111

System: CHILLED WATER

Notes: 1. Change Project Name, Project No., Drawing Number and then select the enter key.

Material: Copper Type L pipe and wet copper fittings using 95/5

Notes: 2. Show Material Messages

Sheet UNLOCKED

Blank Item Size

Cl	Item	Quantity	Size	1/2	3/4	1	1 1/2
	PIPE						
	90 DEG ELBOW						
	45 DEG ELBOW						
	TEE						
	REDUCING TEE						
	CONV REDUCER						
	COUPLING						
	MALE ADAPTER						
	FEMALE ADAPTER						
	Cap						
	PTES PLUG WITH PROBE						
	ELECTRIC UNION						
	FLANGE #1						
	FLTO SET						
	SHUT-OFF VALVE						
	CHECK VALVE						
	DRY VALVE						
	WALL SLEEVE						
	HANGER						

Alternate Data Set

CLP CLP CLP CLP CLP

Item Description:

Group 1 Description:

Group 2 Description:

Typical Note:

Add Quantities For This Type to the Take Off Sheet

Then 1 coil with a 2 way valve and a 1/2 inch mean fluid included is 26 feet of horizontal pipe and 9 feet of vertical pipe

Diagram: A schematic diagram of a piping system. It shows a horizontal pipe with a 2-way valve and a 1/2 inch mean fluid. The diagram includes labels for '2-WAY VALVE', '1/2" MEAN FLUID', and '26' HORIZONTAL PIPE'. The piping is shown in a 3D perspective view.

Status: 8/2/01 3:45 PM

FIG. 20

FIG. 20 is a screenshot of a software application window titled "Replace Title Frame (PROCEED WITH CAUTION)". The window is divided into several sections for data entry and processing.

**Project Information:**

- Project Name: [Empty]
- Project Number: [Empty]
- Drawing No.: [Empty]
- Line No.: [Empty]
- Area: [Empty]
- System: [Empty]
- Material Type: [Empty]
- Name: [Empty]
- Spec: [Empty]
- Size: [Empty]
- Discount Code: [Empty]
- Multiplier: [Empty]
- Fab Shop Fee: [Empty]
- Fab Labor Fee: [Empty]

**Status and Action:**

- Fab Done: [Empty]
- Fab Not Done: [Empty]
- Fld Done: [Empty]
- Fld Not Done: [Empty]
- All Done: [Empty]
- All Not Done: [Empty]
- Material Type: [Empty]
- Name: [Empty]
- Spec: [Empty]
- Size: [Empty]
- Discount Code: [Empty]
- Multiplier: [Empty]
- Fab Shop Fee: [Empty]
- Fab Labor Fee: [Empty]

**Buttons and Options:**

- Buttons: Replace Now, Close, Help, Review Discount
- Options: Add to Base, Enable, Disable, Units On, Units Off

The window also displays a status bar at the bottom with the text "17/1/2011 4:34 AM".

FIG. 21



Figure 1. *Model of the relationship between the Pick List and the Take-Off input Screens*

[illegible]